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## MORINGA

Ben Tree, Benzoline, Horseradish Tree, Malunggay, Drumstick Tree

*Moringa oleifera*

Moringaceae – Moringa family

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### ECHO PLANT INFORMATION SHEET

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**ORIGIN** – The Moringa tree, known also as the Horseradish Tree, is native to northwestern India. Moringa is widely grown, however, in other parts of the old- and new-world tropics, including tropical Asia, many regions of Africa, Indonesia, and South and Central America.

**USES** – Moringa has a variety of uses. Its leaves, flowers, and pods are a food source for humans and animals. The flowers are a good nectar source for honey, and the seeds are a rich oil source for cooking and lubricant uses. The roots are a source of a spice resembling horseradish, and many parts of the plant have been used in medicinal preparations. Whole plants have been used as living hedges, fences, and windbreaks. The wood is very soft; useful for paper but makes low-grade firewood and poor charcoal.

Attracting attention in recent decades is the use of the dried, crushed seeds as a coagulant similar to the chemical alum. Even very muddy water can be cleared when crushed seeds are added. Solid matter and some bacteria will coagulate and then sink to the bottom of a container. The cleaned water can then be poured off and boiled. Use 100 milligrams (about 1 to 1 ½ seeds) of crushed seed to clean 1 liter (1 quart) of muddy water. A Filipino handbook claims Moringa leaves worked into a seedbed 1 week prior to seeding inhibits damping-off fungi. Fresh leaves are a nutritious animal fodder.

**CULTIVATION** – Moringa is grown from seeds or from cuttings. Plant seeds 2 cm (1 in) deep; keep the soil moist after planting. Sprouting occurs normally in 1-2 weeks or in as quickly as 3-4 days in organically rich seedbeds. Seedlings grow rapidly, reaching 3-5 m (9-15 ft) in one growing season. Cutting off the tops of the trees to a height of 1-1.5 m (3-4.5 ft) encourages branching at lower stem positions, producing a living hedge if seedlings are thickly planted. Root 4-5 cm (1.2-2 in) diameter cuttings of branches, 1 m (3 ft) or more in length, in moist soil. In India, cuttings rooted in June may produce a tree with fruits by the following April. Moringa prefers well-drained soils and has high drought resistance. Moringa is not cold-tolerant; freezes will cause it to die back to ground level where new sprouts are produced.. PKM-1 is a bushy variety that is grown for both leaf and pod production.

**HARVESTING AND SEED PRODUCTION** – Harvest very young whole plants, young leaves, and even older leaflets and flowers for food. Pick the slender young pods (referred to as drumsticks) for use like asparagus. Green seed of older pods may be shelled from the pods and cooked like green peas. Harvest ripe pods for the mature seeds. The young roots of half-meter seedlings may be harvested as a source of a condiment resembling horseradish. Repeatedly prune the older flowering branches to stimulate production of new branch shoots as additional sources of leaf harvest material.

**PESTS AND DISEASES** – Moringa is resistant to most pests and diseases, though root rot can occur if the soil is too wet.

**COOKING AND NUTRITION** – Moringa foliage and fruit pods are rich sources of calcium and iron, and good sources of vitamins B, A, and C (when raw) and of protein (including goodly amounts of the sulfur-containing amino acids, methionine and cystine). Cook and eat young tender shoots, whole young leaves, and leaflets of older leaves like spinach. Blossoms are edible; they taste like radish. Use sun and oven-dried flowers and leaves to prepare a tea. Store dried leaves as future soup supplements. Cook young pods for a vegetable reminiscent of asparagus. Browning seeds from mature pods in a skillet, mashing them, and placing them in boiling water causes an excellent cooking or lubricating oil (very similar to olive oil) to float to the surface. The oil preserves well although it does become rancid with age. To prepare a horseradish sauce, pull small trees after a few months, scrape the taproot of its bark, and grind the root until fine. Mix 240 mL (1 cup) ground root with 120 mL (1/2 cup) vinegar and 1 mL (1/4 tsp.) of salt. Chill. Use sparingly; excessive use has been reported as potentially harmful. If you would like Moringa recipes write to ECHO requesting the technical note, "Moringa Recipes."